ORIGINAL FILE

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 2, 21 and 94	)	
of the Commission's Rules	)	RM-7722
Concerning Channel Assignments	)	
in the 27.5-29.5 GHz Band	)	

OPPOSITION

Suite 12 Group ("Suite 12") submits these comments in opposition to the above-captioned petition of the Harris Corporation ("Harris Petition").[1] The Harris Petition requests that the Commission initiate a rulemaking to adopt a channelization plan for the 27.5 - 29.5 GHz ("28 GHz") band and to allow that band to be assigned for short distance point-to-point microwave use under Part 94 in addition to Part 21.

Suite 12 opposes these requests. Adoption of the Harris proposals would harm beneficial 28 GHz point-to-multipoint operations. Moreover, Harris has not demonstrated that there is unmet demand for short distance point-to-point microwave links or that whatever demand exists could be best satisfied in the 28 GHz band. Absent such showings, the Commission should deny the Harris Petition.

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[1] This petition appeared on Public Notice on May 16, 1991, Report No. 1845-Corrected.

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Suite 12 is vitally interested in the policies and regulations affecting the 28 GHz band. As a developer and supplier of 28 GHz microwave equipment, Suite 12 is the only grantee of an equipment authorization for radio transmitters operating in this band,[2] and it holds experimental licenses to develop a 28 GHz local distribution video service.[3] Suite 12 also holds U.S. and international patents for a 28 GHz wireless, two-way integrated broadband system capable of delivering video and a variety of other services.[4] And, the Commission recently authorized Suite 12's affiliate, Hye Crest Management, Inc. ("Hye Crest"), to construct and operate a commercial 28 GHz point-to-multipoint video distribution system in New York.[5]

I. Adoption of the Harris Channelization Plan Is Likely to Stifle Beneficial 28 GHz Point-to-Multipoint Operations

The propagation features of the 28 GHz band are uniquely compatible with point-to-multipoint operations that are based on the cellular re-use of frequencies, such as that licensed to Hye Crest.[6] The Commission has expressly found such 28 GHz

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2 FCC ID HVFJA1, granted October 11, 1989.

3 Call Signs KA2XLG and KA2XVG.

4 See, e.g. U.S. Patent No. 4,747,160.

5 Hye Crest Management, Inc., Memorandum Opinion and Order, 6 FCC Rcd 332 (1991)("Hye Crest Order").

6 See Hye Crest Application, File No. 10380-CF-P-88. Cellular reuse point-to-multipoint operations have also been proposed by LDH International, Inc. See, e.g., File No. 10797-CF-P-91.

operations to be within the public interest.[7]

Adopting the Harris channel plan is likely to stifle the development of such beneficial point-to-multipoint operations. The propagation features in the 28 GHz band limit microwave links to very short distances. The same atmospheric attenuation that restricts the length of microwave links also allows the re-use of spectrum at fairly close distances. One key feature of the cellular reuse point-to-multipoint systems is that frequencies may be re-used at distances as close as 6 to 8 miles. That is only feasible, however, if only one entity is licensed across an entire metropolitan area and is able to engineer a network that re-uses frequencies in an efficient manner. The licensing of individual links, as proposed by Harris, would be inconsistent with this approach. It would deprive an entity of the ability to design a complete network and would forfeit the efficiencies that would be attainable in such an environment. Suite 12 requests that before the Commission considers Harris' channelization proposal, it solicit comments from point-to-multipoint operators to formally explore the impact that such a proposal will have upon such operators. Obviously, the most appropriate context within which to obtain such information would be in the context of a broader rulemaking.[8]

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7 Hye Crest Order at para. 24.

8 See Section V infra.

II. There is No Demand for Point-to-Point Use of 28 GHz

Remarkably, the Harris Petition provides no demand estimates whatsoever for point-to-point microwave use in the 28 GHz band. Indeed, Suite 12 believes that no such demand exists.[9]

The Commission itself recently determined that there is virtually no existing demand for point-to-point use in the 28 GHz band. "The 28 GHz band was made available for point-to-point use in 1959, and since that time, little use of the band has been made."[10]

In addition, the Commission has concluded that virtually no demand is reasonably anticipated for 28 GHz point-to-point use. "[T]he foreseeable demand by point-to-point microwave radio carriers for use of the 28 GHz band ... is practically non-existent. The 28 GHz band is one of five frequency bands allocated for short-haul microwave use. Only two of these bands, 17.7-19.7 GHz ("18 GHz") and 21.2-23.6 GHz ("23 GHz band") are present utilized ... and there has been no evidence presented to suggest that either band is approaching saturation."[11]

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[9] Harris claims that there is an explosive growth in demand for microwave links to interconnect cellular radiotelephone cell sites. Harris Petition at 4. However, 28 GHz does not appear to be suitable for this purpose because cellular telephone cell sites typically are too far apart for the short distances achievable at this frequency range.

[10] Hye Crest Order at note 13.

[11] Id. at para. 23 (footnote omitted). Although the Commission focussed on forecasted demand in New York City, there is no reason to believe that its conclusions do not apply nationwide as well. For more information regarding short haul microwave capacity in New York City, see "High Capacity

(footnote continued)

Indeed, to the extent that there is demand for short haul point-to-point microwave use, the 23 GHz band would be preferred by users because of lower equipment costs inherent in operating at a lower frequency. To the extent that additional capacity is needed, it can be derived from tightening the 23 GHz technical specifications. The frequency stability requirement is only 0.03%, only one-tenth the specification at 18 GHz. Unlike lower frequencies, no technical requirement exists regarding bits per second per hertz. The standard channel bandwidth is 50 MHz, whether the signal is video or narrowband data or voice, so there are many links licensed for 50 MHz channels that actually need far less spectrum. Obviously, if saturation was a concern, the Commission could adopt tighter specifications for the 23 GHz band and thereby create far greater capacity in that band.

III. Individual Link Licensing is Not Suitable for PCN

The only "demand" for point-to-point links that Harris has asserted to justify initiating this rulemaking is for the interconnection of personal communications ("PCN") microcells.[12] However, the Harris Petition is premised on the adoption of a licensing scheme that would have the Commission license individual PCN microwave links;[13] but, because that premise is

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(footnote continued from previous page)
Transmission Alternatives in Lower Manhattan," by Charles L. Jackson, prepared for New York Telephone Company and submitted as part of Exhibit A to the Response of Hye Crest Management, Inc. in File No. 10380-CF-P-88, October 14, 1988.

[12] Harris Petition at 5.

unworkable, the demand based on that premise evaporates. Blanket licensing over a metropolitan area, not licensing of individual links, is the most efficient means for licensing such links.

Although the technologies and frequency bands to be employed for PCN services in the United States have yet to be determined,[14] various technical parameters for PCN are relatively certain. PCN microcells will only cover a range of tens to perhaps hundreds of meters.[15] As a consequence, thousands of microcells typically will be needed in each city,[16] and thus interconnection of these microcells will require thousands of point-to-point links.[17]

The Commission's microwave licensing processes are not designed to accommodate thousands of applications. The need to do frequency coordination for each link, and to process each application individually, would lead to a hopeless administrative

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[13] Specifically, Harris does not contemplate modifying the individualized licensing scheme associated with traditional point-to-point operations.

[14] These issues are the subject of a pending rulemaking. See CC Docket No. 90-314.

[15] See, generally comments in CC Docket No. 90-314.

[16] To illustrate this, consider a square area 10 miles by 10 miles. Assume a square grid of microcells every 1/8 of a mile (every street corner, roughly). This would require about 80 x 80 = 6400 microcells.

[17] At millimeter microwave frequencies, these thousands of point-to-point links could most likely be accommodated in as little as 100 MHz of spectrum because of the frequency reuse capabilities in these frequency bands. Conversely, use of the Suite 12 System as a PCN backbone would require far less spectrum and fewer radios.

morass for both applicants and the Commission.

To avoid these burdens, the Commission will undoubtedly adopt blanket licensing for the links to interconnect PCN microcells. The Commission has adopted blanket licensing for other communications services with the potential for clogging its licensing processes, such as for Ku-band satellite VSAT networks,[18] and for subscriber stations in the Digital Electronic Message Service.[19]

IV. The 38 GHz Band is Best-Suited for PCN Links

By employing efficient blanket licensing, the 38.6-40.0 GHz band ("the 38 GHz band") is already regulated both domestically and internationally to satisfy the interconnection needs of PCN microcells.

In the United States, the 38 GHz band has been available for both common carrier use (Part 21) and private radio use (Part 94) since 1974.[20] A licensee is granted exclusive use of channels within a geographical area, but must show a reasonable projected need for a multiplicity of transmission paths within that area. In addition, channels in the 38 GHz band are assigned for use within a rectangular service area defined by latitude and longitude coordinates.[21] And, assigned channels in the 38.6-40

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18 See Routine Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12/14 GHz Frequency Bands, 51 Fed. Reg. 15067 (April 22, 1986).

19 See Section 21.3(b) of the Commission's Rules.

20 See Second Report and Order in Docket No. 18920.

21 Section 21.701; Section 94.61.

GHz band can be subdivided and used anywhere within the authorized service area.[22]

In addition, at least one United States microwave equipment manufacturer, Microwave Radio Corporation of Lowell, MA, has submitted an application for an equipment authorization with the Commission for a point-to-point radio to operate in the 38 GHz band. This equipment is intended to address the PCN microcell interconnection market.[23]

Similarly, in the United Kingdom, the 38 GHz band is already being used to interconnect CT-2 microcell point-to-point links on a blanket license basis.

V. The Commission Should Defer Consideration of the Harris Petition

Within the next several weeks, Suite 12 plans to file its own petition for rulemaking that will explore the best use of the 28 GHz band.[24] The Commission should defer consideration of the narrow proposals contained in the Harris' Petition in favor of a more comprehensive forum within which to explore these issues.

VI. Conclusion

As demonstrated above, the Harris Petition contains a variety a flaws that compel its dismissal. If, despite the evidence to the contrary the Commission decides to process that petition, it

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[22] Section 21.711; Section 94.61.

[23] Conversely, no authorized equipment is available in the 28 GHz band except Suite 12's equipment.

[24] Among other things, Suite 12's rulemaking request will seek to establish point-to-multipoint operations and frequency reuse as the keystone policies for the 28 GHz band.

should only do so in the context of a broader rulemaking as it is only through a rulemaking that the Commission can determine how the 28 GHz band can best serve the public interest.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Cynthia Forrester, a secretary in the law firm of Ginsburg, Feldman and Bress, Chartered, do hereby affirm that on this 14th day of June, 1991, I have caused to be delivered by U.S. first-class mail the foregoing OPPOSITION to the following:

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